

## TRANSPORT OF ISOCRONOUS AND BURSTY DATA ON A SONET RING

### Abstract

A method and apparatus for using SONET technology to efficiently carry both data and voice traffic by Add/Drop Multiplexing of both isochronous traffic, such as voice and video, and non-isochronous traffic, such as data, in a SONET/SDH fiber-optic ring topology. A portion of a SONET/SDH frame structure (STS-1, STM-1 etc.) is shared by a number of nodes connected to an optical SONET/SDH ring (either directly or sitting behind a SONET/ADM). The inherent column structure of the SONET/SDH frame is used to define dynamic channels (flexible bandwidth channels) between the nodes. Each dynamic channel can be assigned a priority and optionally a minimum bandwidth. The channel to column mapping is varied dynamically for data traffic by a centralized bandwidth manager which serves as an arbiter for requests for bandwidth. Both isochronous traffic and best effort data traffic may be carried in an STS-1 frame thereby allowing over-subscribing and statistical multiplexing of data channels over the unassigned portion of the STS-1 frame.

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